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Amendment dated Mar. 8, 2008
Reply to Office action dated Dec. 10, 2007

Remarks

I.   Status of claims

Claims 1-6, 8-21, and 23-57 are pending.

The Examiner has indicated that claims 2-21 and 24-57 would be allowable if rewritten in independent form and if the rejection under 35 U.S.C. § 112, second paragraph, is overcome.

II.   Claim rejections under 35 U.S.C. § 112

The Examiner has rejected claims 1-6, 8-21, and 23-57 under 35 U.S.C. § 112, second paragraph, "as being indefinite."

1.   The Standard for Establishing a *Prima Facie* Case of Indefiniteness under 35 U.S.C. § 112, Second Paragraph

Regarding the compliance of claims with 35 U.S.C. § 112, second paragraph, MPEP § 2173.02 explains that (citations omitted; original emphasis):

> The essential inquiry pertaining to this requirement is whether the claims set out and circumscribe a particular subject matter with a reasonable degree of clarity and particularity. Definiteness of claim language must be analyzed, not in a vacuum, but in light of:
>
> (A) The content of the particular application disclosure;
>
> (B) The teachings of the prior art; and
>
> (C) The claim interpretation that would be given by one possessing the ordinary level of skill in the pertinent art at the time the invention was made.
>
> In reviewing a claim for compliance with 35 U.S.C. 112, second paragraph, the examiner must consider the claim as a whole to determine whether the claim apprises one of ordinary skill in the art of its scope and, therefore, serves the notice function required by 35 U.S.C. 112, second paragraph, by providing clear warning to others as to what constitutes infringement of the patent.
>
> If the language of the claim is such that a person of ordinary skill in the art could not interpret the metes and bounds of the claim so as to understand how to avoid infringement, a rejection of the claim under 35 U.S.C. 112, second paragraph, would be

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appropriate. However, if the language used by applicant satisfies
the statutory requirements of 35 U.S.C. 112, second paragraph, but
the examiner merely wants the applicant to improve the clarity or
precision of the language used, the claim must <u>not</u> be rejected
under 35 U.S.C. 112, second paragraph, rather, the examiner
should suggest improved language to the applicant.

The Examiner is obligated to establish a proper *prima facie* case of indefiniteness under

35 U.S.C. § 112, second paragraph. In this regard, the Board has stated that (emphasis added):

In rejecting a claim under the second paragraph of 35 U.S.C. 112,
<u>it is incumbent on the examiner to establish</u> that one of ordinary
skill in the pertinent art, when reading the claims in light of the
supporting specification, would not have been able to ascertain
with a reasonable degree of precision and particularity the
particular area set out and circumscribed by the claims.1

Similarly, MPEP § 2173.02 explains that (emphasis added):

If upon review of a claim in its entirety, the examiner concludes
that a rejection under 35 U.S.C. 112, second paragraph, is
appropriate, such a rejection should be made and <u>an analysis as to
why the phrase(s) used in the claim is "vague and indefinite"</u>
<u>should be included in the Office action.</u>

2.   <u>The Examiner's rejection under 35 U.S.C. § 112, second paragraph</u>

The sole explanation given by the Examiner in support of the rejection under 35 U.S.C. §

112, second paragraph, is as follows (see § 6 on page 3 of the Office action; original emphasis):

In particular, with respect to "processing <u>ones</u> of the elements
based at least in part on the blob labels assigned <u>to the blobs the</u>
<u>and the</u> element labels assigned to the elements' of claim 1, since
various things could be thought of from the expression what is

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[1] *Ex parte* Wu, 10 USPQ 2d 2031, 2033 (B.P.A.I. 1989) (emphasis added) (citing *In re* Moore,
439 F.2d 1232, 169 USPQ 236 (C.C.P.A. 1971)

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specifically done is unclear. As a result, each claim cannot be understood.[2]

3. The Examiner has not established a *prima facie* case of indefiniteness under 35 U.S.C. § 112, second paragraph

The entire basis for the Examiner's rejection of claims 1-6, 8-21, and 23-57 is that "various things could be thought of from the expression what is specifically done" in the last clause of independent claim 1 (i.e., "processing ones of the elements based at least in part on the blob labels assigned to the blobs ~~the~~ and the element labels assigned to the elements," as corrected by the present Amendment). The mere fact that "various things could be thought of from the expression what is specifically done" does not constitute an explanation why one of ordinary skill in the pertinent art, when reading the claims in light of the supporting specification and the prior art, would not have been able to ascertain with a reasonable degree of precision and particularity the particular area set out and circumscribed by the claims.

Thus, the Examiner has not established a *prima facie* case of indefiniteness and therefore the rejection of claims 1-6, 8-21, and 23-57 under 35 U.S.C. § 112, second paragraph, should be withdrawn for at least this reason.

4. In any event, claims 1-6, 8-21, and 23-57 are not indefinite

One of ordinary skill in the pertinent art, when reading claims 1-6, 8-21, and 23-57 in light of the supporting specification would have been able to ascertain with a reasonable degree of precision and particularity the particular area set out and circumscribed by the claims. Indeed, claims 1-6, 8-21, and 23-57 are definite and apprise one skilled in the art of their respective scopes by providing clear warning to others as to what constitutes infringement of the claims.

The following paragraph shows the correlations between the disclosure and the elements of independent claim 1:

1. A method of processing an image of elements (page 13, lines 12-15; page 14, line 30 - page 15, line 23), comprising:

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[2] The recitation of "the" after "blobs" in the last clause of independent claim 1 is a typographical error that has been corrected in the present Amendment.

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assigning each of multiple ones of the elements a respective element label selected from a set of at least three element labels that includes at least one edge element label (page 19, lines 7-15; page 21, line 30 - page 22, line 9);

grouping spatially connected ones of the elements into respective blobs based on the element labels assigned to the elements, wherein each of the blobs is assigned a respective one of at least two blob labels (page 22, line 18 - page 23, line 8; page 24, lines 1-11 and 23-26; FIG. 12); and

processing ones of the elements based at least in part on the blob labels assigned to the blobs and the element labels assigned to the elements (page 25, line 33 - page 24, line 6; page 28, line 12 - page 29, line 24; FIG. 14.

The specification clearly describes each of the assigning, grouping, and processing elements of independent claim 1, as evidenced by the citations to the parts of the specification in which corresponding embodiments of the invention are described. Anyone skilled in the pertinent art, when reading the claims in light of the supporting specification and the prior art, would not have been able to ascertain with a reasonable degree of precision and particularity the particular area set out and circumscribed by independent claim 1.

The reason the Examiner has highlighted the word "ones" in the processing element of claim 1 is unclear. In the context of the processing element of claim 1, the word "ones" is a pronoun that refers to two or more of the elements of the image. This language is clear on its face.

Aside from the obvious typographical error (i.e., the recitation of "the" after "blobs", which has been corrected in the present Amendment), there appears to be no other reason the Examiner has highlighted "to the blobs the and the" in the processing element of claim 1. Indeed, this language is clear on its face. In addition, the basis for the Examiner's rejection of claim 1 (i.e., "various things could be thought of from the expression what is specifically done") does not have anything to do with the clarity of the claim language, but rather concerns the breadth of the claim. It is well-settled, however, that applicants are entitled to claims that are as broad as the prior art and the application disclosure will allow. It is improper for the examiner to equate the breadth of the claims with indefiniteness. If the scope of the claims is clear, the

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claims comply with § 112, second paragraph. In addition, the absence of a specific feature recited in the specification does not make a claim indefinite.

For these additional reasons, the rejection of claims 1-6, 8-21, and 23-57 under 35 U.S.C. § 112, second paragraph, should be withdrawn.

4.   Conclusion

For the reasons explained above, the rejection of claims 1-6, 8-21, and 23-57 under 35 U.S.C. § 112, second paragraph, should be withdrawn.

III.   Claim rejections under 35 U.S.C. § 103

A.   Introduction

The Examiner has rejected claims 1, 3-6, 8-12, and 14-16 under 35 U.S.C. § 103(a) over Al-Hussein (US 5,818,978) in view of Mahoney (US 6,009,196).

Independent claim 1 recites:

> 1.   A method of processing an image of elements, comprising:
>
> assigning each of multiple ones of the elements a respective element label selected from a set of at least three element labels that includes at least one edge element label;
>
> grouping spatially connected ones of the elements into respective blobs based on the element labels assigned to the elements, wherein each of the blobs is assigned a respective one of at least two blob labels; and
>
> processing ones of the elements based at least in part on the blob labels assigned to the blobs the and the element labels assigned to the elements.

The Examiner has acknowledged that "Al-Hussein dose not disclose grouping spatially connected ones of the elements into respective blobs based on the element labels assigned to the elements, wherein each of the blobs is assigned a respective one of at least two blob labels; and processing ones of the elements based at least in part on the blob labels assigned to the blobs the and the element labels assigned to the elements" (see § 8 on page 4, last ¶ of the Office action). The Examiner, however, has taken the position that Al-Hussein discloses the assigning element

of claim 1 un col. 3, lines 54-56 and col. 2,lines 25-32, and that Mahoney makes-up for Al-

Hussein's failure to disclose or suggest the grouping and processing elements of claim 1.

Contrary to the Examiner's assertion, however, Al-Hussein' does not disclose or suggest

the assigning element of claim 1; in addition, Mahoney does not make-up for Al-Hussein's

failure to disclose or suggest any of the assigning, grouping, and processing elements of claim 1.

B.   The cited references do not disclose or suggest the assigning element of claim 1

Al-Hussein does not disclose or suggest "assigning each of multiple ones of the elements

a respective element label selected from a set of at least three element labels that includes at least

one edge element label." The Examiner has taken the position that Al-Hussein discloses

"assigning each of multiple ones of the elements a respective element label selected from a set of

at least three element labels that includes at least one edge element label" in col. 3, lines 54-56

and col. 2, lines 25-32 (see § 8 in last line of second ¶ of the Office action).

In col. 3, lines 50-59, Al-Hussein discloses

> Binary images are obtained from gray-scale images by comparing
> each pixel in the gray-scale image to a global threshold so as to
> binarize each pixel. The global threshold is selected by forming a
> histogram of pixel intensities of the gray-scale image, the
> histogram being comprised of plural groups of pixel intensities
> such as eight groups. Based on group adjacency, the top two
> groups in the histogram that are separated by at least one histogram
> group are identified. The global threshold is calculated at an
> intermediate distance, such as one-half the distance, between the
> two top groups.

This disclosure does not disclose anything whatsoever about "assigning each of multiple ones of

the elements a respective element label selected from a set of at least three element labels that

includes at least one edge element label," as recited in claim 1. To the contrary, this disclosure

explicitly describes a binarization process in which each pixel is assigned a respective label

selected from a set of two pixel labels.

In col. 2, lines 25-32, Al-Hussein merely states that scanning artifacts might cause gray-

scale values to be assigned to pixels at the edges of characters. The cited disclosure would not

have led one skilled in the art to assign "each of multiple ones of the elements a respective

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element label selected from a set of at least three element labels that includes at least one edge element label." Indeed, this disclosure does not even hint that pixels at characters edges are detected, much less anything about labeling each such pixel with a respective element label selected from a set of <u>at least three element labels</u> that includes at least one edge element label.

Mahoney does not make-up for the failure of Al-Hussein to disclose or suggest the assigning element of claim 1. Indeed, Mahoney does not disclose or suggest anything that would have led one skilled in the art to assign "each of multiple ones of the elements a respective element label selected from a set of <u>at least three element labels</u> that includes at least one edge element label," as recited in claim 1.

<blockquote>C.   <u>The cited references do not disclose or suggest any of the grouping and processing elements of claim 1</u></blockquote>

Neither Al-Hussein nor Mahoney discloses or suggests "grouping spatially connected ones of the elements into respective blobs based on the labels assigned to the elements" where the element labels are "selected from a set of at least three element labels that includes at least one edge element label," as recited in claim 1.

As mentioned above, the Examiner has acknowledged that Al-Hussein fails to disclose or suggest the grouping and processing elements of claim 1. Indeed, Al-Hussein performs a connected components analysis based on a bi-level image in which each of the pixel is assigned either a block pixel label or a white pixel label (see, e.g., col. 18, line 18 - col. 19, line 15, of Al-Hussein). This process does not in any way involve grouping spatially connected ones of the elements into respective blobs based on at least three element labels that are assigned to the elements, nor does it involve processing ones of the elements based at least in part on the blob labels assigned to the blobs the and the element labels assigned to the elements.

With respect to Mahoney, the Examiner has taken the position that (see § 8, first ¶ on page 5 of the Office action):

> Mahoney (196), in the same area of a document image capture
> method and an image processing (as shown in fig 1), teaches
> grouping spatially connected ones of the elements into respective
> blobs based on the element labels assigned to the elements, (<u>pixels
> are classifying operation 66 of fig 2</u>) wherein each of the blobs is

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assigned a respective one of at least two blob labels (the output
from process 32 of fig 2 is set of connected components or "blob",
see col.8, lines 62-68); and processing ones of the elements based
at least in part on the blob labels assigned to the blobs the and the
element labels assigned to the elements (see col.7, lines 6-15).

Contrary to the Examiner's statement, however, neither the classifying operation 66 in
FIG. 2 nor the output from process 32 of FIG. 2 (which corresponds to the "blob" discussion in
col. 8, lines 62-68), constitutes a disclosure of grouping spatially connected ones of the image
elements into respective blobs based on at least three element labels (including at least one edge
element label) that are assigned to the image elements, wherein each of the blobs is assigned a
respective one of at least two blob labels.

- The classifying process 66 involves extracting running text blocks from each of
  the groups 62 and placing non-running ones of the text blocks in the groups into
  contiguous regions (see col. 9, lines 47-54). This process does not involve
  grouping image elements based on a set of at least three element labels that
  includes at least one edge element label, wherein each of the blobs is assigned a
  respective one of at least two blob labels. Instead, this process involves
  classifying the text blocks within each of the groups 62 as either running text or
  non-running text based on a comparison of a ratio of gap area to block area for
  each block to a threshold (see block 166 of FIG. 4; col. 12, lines 59-65).

- The output from process 32 in FIG. 2 (which corresponds to the "blob"
  discussion in col. 8, lines 62-68) "is a set of connected components or 'blobs'
  which preferably encompass a single running text paragraph" (col. 8, lines 62-67).
  This process does not involve grouping image elements based on a set of at least
  three element labels that includes at least one edge element label, wherein each of
  the blobs is assigned a respective one of at least two blob labels. Instead, this
  process involves classifying the text blocks within each of the groups 62 as either
  running text or non-running text based on a comparison of a ratio of gap area to
  block area for each block to a threshold (see block 166 of FIG. 4; col. 12, lines
  59-65).

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Since Mahoney fails to disclose or suggest "grouping spatially connected ones of the elements into respective blobs based on the element labels assigned to the elements, wherein each of the blobs is assigned a respective one of at least two blob labels," Mahoney necessarily fails to disclose or suggest "processing ones of the elements based at least in part on the blob labels assigned to the blobs the and the element labels assigned to the elements."

D. Conclusion

Thus, neither Al-Hussein nor Mahoney individually discloses any of the assigning, grouping, and processing elements of claim 1. Therefore, there is no combination of Al-Hussein and Mahoney that possibly could disclose any of these elements of claim 1. For at least these reasons, the rejection of independent claim 1 under 35 U.S.C. § 103(a) over Al-Hussein in view of Mahoney should be withdrawn.

Each of claims 3-6, 8-12, and 14-16 incorporates the elements of independent claim 1 and therefore is patentable over Al-Hussein and Mahoney for at least the same reasons explained above.

III. Conclusion

For the reasons explained above, all of the pending claims are now in condition for allowance and should be allowed.

Charge any excess fees or apply any credits to Deposit Account No. 08-2025.

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